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FOREIGN DOCUMENTS OR RADIO BROADCASTS

REPORT

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THIS IS UNEVALUATED INFORMATION

SOURCE: Nasledstvo Mikrobor, by V. O. Tauson, 146 pp, Academy of Sciences USSR, 1947.

REPORT ON THE BOOK "THE HERITAGE OF MICROBES"

V. O. Tauson's 146 page booklet, one in a series on popular science, presents modern theories regarding the role of microbes in the formation of various types of rocks and materials commonly known as mineral fuels. There is special reference to Tauson's valuable work on the exchange of substances in microbes. It describes such remarkable activities of microbes as the assimilation of "unedible" substances, e.g., paraffin, mineral wax, naphthalene, benzene, carbolic acid and others. These studies enabled Tauson to formulate his theory of the exothermal nature of biological syntheses.

Tauson spent much of the last years of his life studying the problem of the "geological activity" of microbes. He published several works dealing with the bacterial oxidation of petroleum, the changes brought about in petroleum deposits by the action of microbes, the bacterial reduction of sulfates, the role of microflora in the formation of peat, etc.

The most interesting and valuable of Tauson's hypotheses was, that it is possible to determine the trends in the evolution of some groups of microbes on the basis of the chemical composition of mineral rock and the physiological and biochemical characteristics of present-day micro organisms. Tauson extends this hypothesis to suggest that it is doubtful that various mineral rocks, similar to those which were formed many thousands of years ago are forming in our present geologic age. Tauson made frequent expeditions to the Taman peninsula, to Caucasia, Pamir, and into Central Asia to collect material in support of his contention.

Tauson's present effort was intended to solve several important questions, specifically: (1) from what were our modern mineral rocks (particularly mineral fuels) formed; (2) when were these substances formed; (3) under what conditions were they formed; and (4) how were the extensive deposits formed?

The scientific interest in the solution of these problems runs parallel to practical value. A satisfactory solution would aid immeasurably in the present programs for the discovery and development of new mineral fuel deposits. Modern industrial technology requires great amounts of both solid and liquid mineral fuels. It is therefore necessary to determine the various rocks and minerals among which the deposits are found in order to know where to look to locate new deposits.

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With respect to chemical properties, composition, and origin, mineral fuel rocks, or caustobioliths, are divided into two categories; (1) the study of humus rock, and (2) the study of saprophelic rocks (bituminous). Studies under the first category take in humus, peat, brown coal, coal and anthracite. Studies under the second category include studies on natural gas, petroleum, asphalt, mineral wax and bituminous slates.

Both categories of rocks (humus and saprophelic) are of organic derivation, but their formation was brought about by quite different organisms and took place under different surrounding conditions. Nevertheless, certain aspects of their formation are similar; for example, they were both formed as a result of the activity of microbes. Thus, without any attempt to dramatize, it is permissible to state that our largest mineral fuel resources were formed by the activity of these minute living organisms. Mineral fuels, as we know them today, are the heritage left to us by microbes living in long-past geologic ages.

Tauson realizes the important and difficult task he has set. He attempted to tell the ordinary reader something about the intricacies of the formation of mineral fuel, the life blood of today's industrial economy.

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